

IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A system for modifying a time-base of a digital video stream; the system including an encoding device and a storage device connected via a digital video communication system, and a decoder/renderer;

the encoding device including:

an input for receiving an input video signal, and an input frame signal (vsync) synchronous to and indicating frame boundaries in the input video signal;

an encoder for converting the input video signal and input frame signal to a corresponding digital video stream complying with a predetermined video encoding standard; the encoder including a encoder clock complying with the video encoding standard; the digital video stream including: a sequence of digital video frames corresponding to received input video frames; a sequence of program clock reference stamps (PCR) representing a clock signal of the encoder clock; and a sequence of video presentation time stamps (PTS) each associated with a respective digital video frame and representing a value of a counter driven by the clock signal at a moment of receipt of an input video frame that corresponds to the digital video frame; and

an output for providing the digital video stream via the digital video communication system;

the storage device including:

an input for receiving the digital video stream via the digital video communication system;

a time-base modifier operative to:

replace, in the digital video stream input to the storage device, the video presentation time stamps (PTS) by respective modified video presentation time stamps (M-PTS) based on a constant predetermined frame-time between successive presentation time stamps, and

replace the program clock reference stamps (PCR) by respective modified program clock reference stamps (M-PCR) by scaling the program clock reference stamps (PCR) using a scaling factor that depends on a ratio of an expected time between a video presentation time stamp j and a preceding video presentation time stamp j-n and an actual time between the video presentation time stamp j and the preceding video presentation time stamp j-n, where  $j - n > 0$ , and the expected time is n times the predetermined frame time, thereby forming a time-base modified video stream;

a storage for storing at least a part of the time-base modified video stream; and

an output for providing a said part of the time-base modified video stream from the storage device to the decoder/renderer; and

the decoder/renderer including an input for receiving a said part of the time-base modified video stream from the storage device and being operative to decode the time-base modified video stream received from the storage device to enable rendering of the

digital video frames in the stream synchronous with the respective associated modified video presentation time stamps.

| 2. (Currently Amended) A—The system as claimed in claim 1,  
wherein the time-base modifier includes a clock unit operative to  
generate a clock signal locked to the received video presentation  
time stamps (PTS) using an error signal that depends on the scaling  
factor; the time-base modifier being operative to obtain the  
modified program clock reference stamps (M-PCR) by sampling a  
counter driven by the clock signal at a moment of receipt of the  
program clock reference (PCR).

| 3. (Currently Amended) A—The system as claimed in claim 2,  
wherein the time-base modifier is operative to low-pass filter the  
received video presentation time stamps and the clock unit is  
locked to the filtered video presentation time stamps.

| 4. (Currently Amended) A—The system as claimed in claim 2,  
wherein the time-base modifier is operative to low-pass filter the  
scaling factor.

| 5. (Currently Amended) A—The system as claimed in claim 1,  
wherein the digital video stream includes information on a nominal  
frame rate of the video signal and the time-base modifier is  
operative to derive the predetermined frame time from the digital  
video stream.

| 6. (Currently Amended) ~~A~~The system as claimed in claim 1,  
wherein the input of the encoding device is operative to receive an  
analog audio signal; the encoding device further including a  
sampler for sampling the received analog audio signal under control  
of a sampling clock signal that is derived from the video input  
signal and locked onto the input frame signal (vsync); and wherein  
the encoder is operative to convert the sampled audio signal into a  
time sequence of corresponding audio frames and insert the audio  
frames and respective audio presentation time stamps (A-PTS) in the  
digital video signal stream.

| 7. (Currently Amended) ~~A~~The system as claimed in claim 6,  
wherein the time-base modifier is operative to replace the audio  
presentation time stamps (A-PTS) by modified audio presentation  
time stamps (MA-PTS) by scaling the audio presentation time stamps  
(A-PTS) using the scaling factor.

| 8. (Currently Amended) ~~A~~The system as claimed in claim 1,  
wherein the storage device is operative to time stamp each packet  
of the digital video stream on receipt of the packet; to store each  
time stamp in the storage in association with the corresponding  
received packet; and to output packets of the stored stream  
according to the respective time stamps and a predetermined delay.

| 9. (Currently Amended) A—The system as claimed in claim 8,  
wherein the storage device includes a clock for providing timing  
signals and the storage device being operative to use as the time  
stamps stored in the storage the timing signal scaled using the  
scaling factor.

| 10. (Currently Amended) A—The system as claimed in claim 2,  
wherein the storage device is operative to use as the time stamps  
stored in the storage a counter value from a counter driven by the  
clock signal locked to the received video presentation time stamps  
(PTS).

| 11. (Currently Amended) A—The system as claimed in claim 1,  
wherein the video encoding standard is MPEG2.

| 12. (Currently Amended) A—The system as claimed in claim 1,  
wherein the digital video communication system includes an  
isochronous communication channel for transferring the digital  
video stream.

| 13. (Currently Amended) A storage device for use in a—the  
system as claimed in claim 1; the storage device including:  
an input for receiving a digital video stream complying  
with a predetermined video encoding standard via a digital video  
communication system; the digital video stream including: a  
sequence of digital video frames; a sequence of program clock

reference stamps (PCR) representing a clock signal of an encoder clock; and a sequence of video presentation time stamps (PTS) each associated with a respective digital video frame;

a time-base modifier operative to:

replace the video presentation time stamps (PTS) by respective modified video presentation time stamps (M-PTS) based on a constant predetermined frame time between successive presentation time stamps; and

replace the program clock reference stamps (PCR) by respective modified program clock reference stamps (M-PCR) by scaling the program clock reference stamps (PCR) using a scaling factor that depends on a ratio of an expected time between a video presentation time stamp j and a preceding video presentation time stamp j-n and an actual time between the video presentation time stamp j and the preceding video presentation time stamp j-n, where  $j - n > 0$ , and the expected time is n times the predetermined frame time;

a storage for storing at least a part of the time-base modified video stream; and

an output for providing a video stream from the storage device.

14. (Currently Amended) A time-base modifier for use in ~~a-the~~ storage device as claimed in claim 13, ~~a-the~~ time-base modifier operative to replace, in a digital video stream that includes a sequence of digital video frames, a sequence of program clock

reference stamps (PCR) representing a clock signal of an encoder clock, and a sequence of video presentation time stamps (PTS) each associated with a respective digital video frame, the video presentation time stamps (PTS) by respective modified video presentation time stamps (M-PTS) based on a constant predetermined frame time between successive presentation time stamps and the program clock reference stamps (PCR) by respective modified program clock reference stamps (M-PCR) by scaling the program clock reference stamps (PCR) using a scaling factor that depends on a ratio of an expected time between a video presentation time stamp  $j$  and a preceding video presentation time stamp  $j-n$  and an actual time between the video presentation time stamp  $j$  and the preceding video presentation time stamp  $j-n$ , where  $j > n > 0$ , and the expected time is  $n$  times the predetermined frame time.

15. (Original) A method of modifying a time-base of a digital video stream that complies with a predetermined video encoding standard and includes a sequence of digital video frames, a sequence of program clock reference stamps (PCR) representing a clock signal of an encoder clock, and a sequence of video presentation time stamps (PTS) each associated with a respective digital video frame; the method including:

replacing the video presentation time stamps (PTS) by respective modified video presentation time stamps (M-PTS) based on a constant predetermined frame time between successive presentation time stamps; and

replacing the program clock reference stamps (PCR) by respective modified program clock reference stamps (M-PCR) by scaling the program clock reference stamps (PCR) using a scaling factor that depends on a ratio of an expected time between a video presentation time stamp  $j$  and a preceding video presentation time stamp  $j-n$  and an actual time between the video presentation time stamp  $j$  and the preceding video presentation time stamp  $j-n$ , where  $j+n>0$ , and the expected time is  $n$  times the predetermined frame time.

16. (Original) A computer program product operative to cause a processor to perform the method of claim 15.